

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
16 June 2005 (16.06.2005)

PCT

(10) International Publication Number
WO 2005/054483 A2

(51) International Patent Classification⁷: C12N 15/82 (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(21) International Application Number:
PCT/GB2004/005058

(22) International Filing Date:
30 November 2004 (30.11.2004)

(25) Filing Language:
English

(26) Publication Language:
English

(30) Priority Data:
0327919.7 2 December 2003 (02.12.2003) GB

(71) Applicant (*for all designated States except US*): PLANT BIOSCIENCE LIMITED [GB/GB]; Norwich Research Park, Colney Lane, Norwich, Norfolk NR4 7UH (GB).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): CAMMUE, Bruno, Philippe, Angelo [BE/BE]; J.B Woutersstraat 109a, B-1652 Asseberg (BE). DE BOLLE, Miguel, Francesco, Coleta [BE/NL]; Oordeelsestraat 15, NL-5111 PB Baarle-Nassau (NL). BUTAYE, Katleen [BE/BE]; Donk 12, B-2650 Edegem (BE).

(74) Agents: KREMER, Simon et al.; Mewburn Ellis LLP, York House, 23 Kingsway, London, Greater London WC2B 6HP (GB).

(84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/054483 A2

(54) Title: ENHANCED EXPRESSION

(57) Abstract: Disclosed herein are methods and means of achieving enhanced expression of a target nucleotide sequence in a transgenic organism, which methods comprise the steps of: (i) providing an organism in which post-transcriptional gene silencing (PTGS) is suppressed, (ii) associating said target nucleotide sequence with one or more heterologous Matrix Attachment Region (MARs), and (iii) causing or permitting expression from the target nucleotide sequence in the organism. Unexpectedly, the MARs do not merely relieve gene silencing, but can actually lead to expression levels higher than can be achieved in wild-type organisms and higher than expression levels in organisms in which PTGS is suppressed but where the MARs are not employed.